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| APPLICATION NO.           | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------|-------------|----------------------|---------------------|------------------|
| 08/737,042                | 10/30/1996  | BJORN HEED           | C-35620             | 4727             |
| 7590 11/18/2003           |             |                      |                     |                  |
| DVORAK AND TRAUB          |             |                      |                     |                  |
| 53 WEST JACKSON BOULEVARD |             |                      |                     |                  |
| CHICAGO, IL 60604         |             |                      |                     |                  |
|                           |             | EXAMINER             |                     |                  |
|                           |             | LEO, LEONARD R       |                     |                  |
|                           |             | ART UNIT             |                     |                  |
|                           |             | PAPER NUMBER         |                     |                  |
|                           |             | 3753                 |                     |                  |

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

08/737,042

Applicant(s)

Heed

Examiner

Leonard R. Leo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Aug 29, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 5 and 7-11 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5 and 7-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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## DETAILED ACTION

Claims 5 and 7-11 are pending.

### *Specification*

The following guidelines illustrate the preferred layout and content for patent applications.

These guidelines are suggested for the applicant's use.

#### Arrangement of the Specification

The following order or arrangement is preferred in framing the specification and, except for the reference to the drawings, *each of the lettered items should appear in upper case, without underling or bold type, as section headings*. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) Title of the Invention.
- (b) Cross-Reference to Related Applications.
- © Statement Regarding Federally Sponsored Research or Development.
- (d) Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on compact disc (see 37 CFR 1.52(e)(5)).
- (e) Background of the Invention.
  - 1. Field of the Invention.
  - 2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) Brief Summary of the Invention.
- (g) Brief Description of the Several Views of the Drawing(s).
- (h) Detailed Description of the Invention.
- (I) Claim or Claims (commencing on a separate sheet).

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- (j) Abstract of the Disclosure (commencing on a separate sheet).
- (k) Drawings.
- (l) Sequence Listing, if on paper (see 37 CFR 1.821-1.825).

The disclosure is objected to because of the following informalities:

The specification lacks a Brief Description of the Several Views of the Drawing(s) and a Detailed Description of the Invention with respect to newly submitted Figures 5-7.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over ACV (SU 800,500) in view of Usher.

ACV discloses a recuperative heat exchanger comprising a casing having inlet and outlet ports 2-5; a heat transfer package having a plurality of connected rectangular planar elements with a corrugated pattern extending the entire length and width thereof, the planar elements being folded in an accordion-like manner along fold lines 7; but does not disclose corrugations greater than 45 degrees with respect to the longitudinal flow direction.

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Usher discloses a heat exchanger for 2 fluids comprising a plurality of rectangular planar elements (Figures 1-4); wherein the angle of the ridges and channels are 30 degrees with respect to the width of the plate (i.e. 60 degrees with respect to the length of the plate) for the purpose of achieving optimal heat exchange (page 3, lines 31-36).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in ACV corrugations extending at an angle more than 45 degrees with respect to the net flow path for the purpose of achieving optimal heat exchange as recognized by Usher.

Claims 7-8 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over ACV in view of Usher as applied to claims 5 and 9 above, and further in view of Hultgren.

The combined teachings of ACV and Usher lacks top and bottom end covering elements.

Hultgren discloses a heat exchanger comprising a casing 2 defined by top and bottom ends 3 and lengthwise 5 and width-wise 4 sidewalls having inlet and outlet ports 7-10; a heat transfer package 11 (20) having a plurality of connected rectangular planar elements 24 with corrugations 17, the planar elements being folded in an accordion-like manner; and top and bottom end covering elements 13 (Figure 1, column 3, line 67 to column 4, line 2) for the purpose of ease of assembly and manufacture.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in ACV top and bottom end covering elements for the purpose of ease of assembly and manufacture as recognized by Hultgren.

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*Response to Arguments*

The drawings objection under 37 CFR 1.83(a) is withdrawn.

The Examiner appreciates applicant's English translation of ACV (SU 800500).

However, the translation is not certified and its validity cannot be verified. The Examiner will admit for the record that ACV does not explicitly disclose in the translation a specific angle of the corrugations. Drawings are admissible as prior art alone. See MPEP 2125. As permissibly gleaned, ACV clearly discloses in Figure 2 the corrugations are at an angle of 45 degrees. The non-certified translation further solidifies the fact that the device of ACV is particularly pertinent to the claimed invention, i.e. a heat recovery apparatus between indoor and outdoor air by employing accordion-like folded planar elements with corrugations thereon.

As noted in the previous Office action, the prosecution history of the instant application involves the lengthy amendment of the angle of the ridges and channels to bestow novelty. The prosecution history clearly shows that claim 5 prior to 4/23/1999, recited "a series of alternating ridges and channels formed at an angle of *at least 45 degrees*", which is read as an angle greater than 45 degrees. Claim 5 as amended on 4/23/1999, recited "a series of alternating ridges and channels formed at an angle of *no more than 45 degrees*", which is read as less than 45 degrees. Prior to the amendment, Usher was employed as a secondary reference teaching the angle greater than 45 degrees. Applicant's remarks with respect to Usher in the 4/23/1999 amendment has been fully considered but they are not persuasive. Usher was withdrawn only in view of the amendment to claim 5, since Usher does not teach an angle less than 45 degrees. Usher (page 3,

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lines 31-36) disclosing alternating ridges and channels formed at an angle of greater than 45 degrees is clearly pertinent to the primary reference of ACV and the instant invention. Usher clearly teaches improved heat exchange is achieved with an angle greater than 45 degrees.

Rather than reiterate the Examiner's position with respect to Hultgren, the remarks in the Office action mailed 6/4/2002 are believed applicable. However, the instant rejection of claims 7-8 and 10-11 merely employ Hultgren as a secondary reference to teach top and bottom end covering elements for the purpose of ease of assembly and manufacture.

Throughout the prosecution history, it has been unclear what applicant believes is the novelty of the invention. As claimed, the Examiner has presented proper prior art rejections to meet the instant claimed invention. In the instant rejection, applicant has failed to convince the Examiner that the combination of the prior art is not similar in structure and that the similar structure will not function in a manner similar to applicant's invention.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

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1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry of a general nature, relating to the status of this application or clerical nature (i.e. missing or incomplete references, missing or incomplete Office actions or forms) should be directed to the Technology Center 3700 Customer Service whose telephone number is (703) 306-5648.

Any inquiry concerning this Office action should be directed to Leonard R. Leo whose telephone number is (703) 308-2611.



LEONARD R. LEO  
PRIMARY EXAMINER  
ART UNIT 3743

November 16, 2003